AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. - 10. (cancelled)

11. (original) A method of processing an organic memory device, comprising:

forming a channel in a semiconductor substrate material;

forming an electrode in the channel;

mixing a polymer solution comprising a conductive polymer and an organic solvent, the polymer comprising a polar group at one end and a non-polar, conjugated chain, and

depositing the polymer solution into the channel to form an organic semiconductor layer over the electrode, the polymer orienting itself so that the polar group is proximate the electrode and the non-polar chain extending away from the electrode.

12. (original) The method of claim 11, further comprising mixing the polymer solution with a conductive polymer concentration to facilitate spinning the solution into the channel.

13. (original) The method of claim 12, further comprising heating the polymer solution to increase the conductive polymer present in the polymer solution to a suitable concentration to facilitate self-assembly of the conductive polymer on an electrode.

14. (original) The method of claim 11, further comprising placing the polymer solution in a vacuum to facilitate removal of the organic solvent.

15. (currently amended) The ~~memory device~~ method of claim 11, the organic semiconductor material comprising at least one from the group consisting of polyacetylene, polyphenylacetylene, polydiphenylacetylene, polyaniline, poly(p-phenylene vinylene), polythiophene, polyporphyrins, porphyrinic macrocycles, thiol derivatized polyporphyrins, polymetallocenes, polyferrocenes, polyphthalocyanines, polyvinylenes, and polypyrroles.

16. - 21. (cancelled)

22. (new) The method of claim 11, wherein the electrode is formed in accordance with a damascene process.

23. (new) The method of claim 11, wherein the electrode is formed in accordance with at least one of a single damascene process and a dual damascene process.

24. (new) The method of claim 11, wherein the electrode comprises copper.

25. (new) A method of processing an organic memory device, comprising:

forming a channel in a semiconductor substrate material;

forming an electrode in the channel in accordance with at least one of a single damascene process and a dual damascene process;

mixing a polymer solution comprising a conductive polymer and an organic solvent, the polymer comprising a polar group at one end and a non-polar, conjugated chain, and

depositing the polymer solution into the channel to form an organic semiconductor layer over the electrode, the polymer orienting itself so that the polar group is proximate the electrode and the non-polar chain extending away from the electrode.

26. (new) The method of claim 25, further comprising mixing the polymer solution with a conductive polymer concentration to facilitate spinning the solution into the channel.

27. (new) The method of claim 26, further comprising heating the polymer solution to increase the conductive polymer present in the polymer solution to a suitable concentration to facilitate self-assembly of the conductive polymer on an electrode.

28. (new) The method of claim 25, further comprising placing the polymer solution in a vacuum to facilitate removal of the organic solvent.

29. (new) The method of claim 25, the organic semiconductor material comprising at least one from the group consisting of polyacetylene, polyphenylacetylene, polydiphenylacetylene, polyaniline, poly(p-phenylene vinylene), polythiophene, polyporphyrins, porphyrinic macrocycles, thiol derivatized polyporphyrins, polymetallocenes, polyferrocenes, polyphthalocyanines, polyvinylenes, and polypyrroles.

30. (new) The method of claim 25, the organic semiconductor material comprising at least one from the group consisting of polyacetylene, polyphenylacetylene, polydiphenylacetylene, and polythiophene.

31. (new) The method of claim 25, the organic semiconductor material comprising polyacetylene.

32. (new) A method of processing an organic memory device, comprising:

forming a channel in a semiconductor substrate material;

forming an electrode in the channel;

mixing a polymer solution comprising a conductive polymer and an organic solvent, the polymer comprising a polar group at one end and a non-polar, conjugated chain, and

depositing the polymer solution into the channel to form an organic semiconductor layer over the electrode, the organic semiconductor material comprising a conjugated organic material, the polymer orienting itself so that the polar group is proximate the electrode and the non-polar chain extending away from the electrode.

33. (new) The method of claim 32, wherein the electrode is formed in accordance with a damascene process.

34. (new) The method of claim 32, further comprising mixing the polymer solution with a conductive polymer concentration to facilitate spinning the solution into the channel.

35. (new) The method of claim 34, further comprising heating the polymer solution to increase the conductive polymer present in the polymer solution to a suitable concentration to facilitate self-assembly of the conductive polymer on an electrode.

36. (new) The method of claim 32, further comprising placing the polymer solution in a vacuum to facilitate removal of the organic solvent.

37. (new) The method of claim 32, wherein the electrode is formed in accordance with at least one of a single damascene process and a dual damascene process.